USES OF MUSHROOMS.

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While we are thus apt to regard many of the mushrooms as enemies to the forest, they are, at the same time, of incalculable use to the forest. The mushrooms are nature's most active agents in the disposal of the forest's waste material. Forests that have developed without the guidance of man have been absolutely dependent upon them for their continued existence. Where the species of mushrooms are comparatively few which attack living trees, there are hundreds of kinds ready to strike into fallen timber. There is a degree of moisture present on the forest floor exactly suited to the rapid growth of the mycelium of numbers of species in the bark, sap wood, and heart wood of the fallen trees or shrubs. In a few years the branches begin to crumble because of the disorganizing effect of the mycelium of the wood. It gradually passes into the soil of the forest floor, and is made available food for the living trees. How often one notices that seedling trees and shrubs start more abundantly on rotting logs.

The fallen leaves, too, are seized upon by the mycelium of a great variety of mushrooms. It is through the action of the mycelium of mushrooms of every kind that the fallen forest leaves, as well as the trunks and branches, are converted into food for the living trees. The fungi, are, therefore, one of the most important agents in providing available food for the virgin forest.

The spawn of some fungi in the forest goes so far, in a number of cases, as to completely envelope those portions of the roots of certain trees as to prevent the possibility of the roots taking up food material and moisture on their own account. In such cases, the oaks, beeches, horn-beams, and the like, have the younger parts of their roots completely enveloped with a dense coat of mycelium. The mycelium in these cases absorbs the moisture from the soil or forest floor and conveys it over to the roots of the tree, and in this way supplies them with both food and water from the decaving humus, the oak being thus dependent on the mycelium. In the fields, however, where there is not the abundance of humus and decaying leaves present in the forest, the coating of mycelium on the roots of these trees is absent, and in this latter case the young roots are provided with root hairs which take up the moisture and food substances from the soil in the ordinary way.

The mushrooms also prevent the forest from becoming choked or strangled by its own fallen members. Were it not for the action of the mushroom mycelium in causing the decay of fallen timber in the forest, in time it would be piled so high as to allow only a miserable existence to a few choked individuals. The action of the mushrooms in thus disposing of the fallen timber in the forests, and in converting dead trees and fallen leaves into available food for the living ones, is probably the most important role in the existence of these plants. Mushrooms, then, are to be given very high rank among the natural agencies which have contributed to the good of the world. When we contemplate the vast areas of forest in the world we can gain some idea of the stupendous work performed by the mushrooms in "house cleaning," and in "preparing food," work in which they are still engaged.

—*Mushrooms, Edible, Poisonous, Etc.*

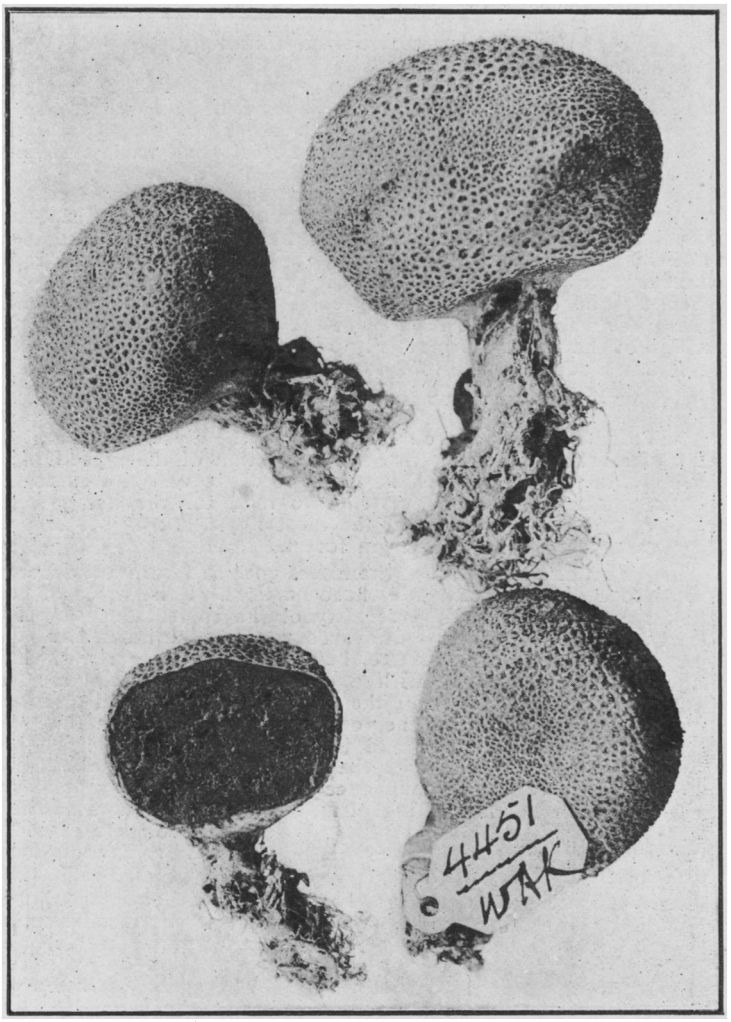

Fig. 199. SCLER-O-DER'-MA VUL-GA'-RE.. A puff-ball with a firm, corky, warty wall or covering, growing in sandy soil or clay, in sheltered places, seldom on wood. The plants from which the photo was made were collected at Columbus, Ohio. This species is widely distributed, occuring in Europe, Africa, and Australia as well as in North America. It was known to the early botanists and has been repeatedly renamed, the following being some of the synonyms: *Lycoperdon cervinum, L. aurantiacum, L. tessellatum, Scleroderma citrinum, S. aurantiacum.*

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